



[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2007-28413; Directorate Identifier 2007-NE-25-AD]

RIN 2120-AA64

Airworthiness Directives; General Electric Company Turbofan Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: We propose to supersede airworthiness directives (ADs) 90-26-01, 91-20-02, and 2009-05-02, which apply to all General Electric Company (GE) CF6-80C2 and CF6-80E1 series turbofan engines. Since we issued ADs 90-26-01, 91-20-02, and 2009-05-02, we received a report of an undercowl fire caused by a manifold high-pressure fuel leak, and several additional reports of fuel leaks. This proposed AD would require additional repetitive inspections, replacement of tube (block) clamp, and inspection of fuel manifolds for wear at each tube (block) clamp location. We are proposing this AD to prevent failure of the fuel manifold, which could lead to uncontrolled engine fire, engine damage, and damage to the airplane.

DATES: We must receive comments on this proposed AD by **[INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.
- Fax: 202-493-2251.

- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this proposed AD, contact General Electric Company, GE Aviation, Room 285, 1 Neumann Way, Cincinnati, OH 45215; phone: 513-552-3272; email: geae.aoc@ge.com. You may view this service information at the FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7125.

Examining the AD Docket

You may examine the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2007-28413; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this proposed AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (phone: 800-647-5527) is in the **ADDRESSES** section. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: Kasra Sharifi, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA. 01830; phone 781-238-7773; fax: 781-238-7199; email: kasra.sharifi@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

We invite you to send any written relevant data, views, or arguments about this proposed AD. Send your comments to an address listed under the **ADDRESSES** section.

Include “Docket No. FAA-2007-28413; Directorate Identifier 2007-NE-25-AD” at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this proposed AD. We will consider all comments received by the closing date and may amend this proposed AD because of those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this proposed AD.

Discussion

On December 20, 1990, we issued AD 90-26-01 (55 FR 49611, November 30, 1990), for GE CF6-80C2 series turbofan engines. That AD requires replacing fuel manifold, part numbers (P/Ns) 1303M31G04 and 1303M32G04, within 30 calendar days after the effective date of the AD. That AD resulted from a report of an engine fire.

On November 15, 1991, we issued AD 91-20-02 (56 FR 55231, October 25, 1991), for the same engines. That AD requires replacing fuel manifold, P/Ns 1303M31G06, 1303M32G06, 1303M31G07, 1303M32G07, 1303M31G08, and 1303M32G08, at the next engine removal, but no later than June 30, 1993. That AD also resulted from a report of an engine fire.

On March 31, 2009, we issued AD 2009-05-02 (74 FR 8161, February 24, 2009), for GE CF6-80C2 and CF6-80E1 series turbofan engines with fuel manifolds, P/Ns 1303M31G12 and 1303M32G12, installed in drainless fuel manifold assemblies. That AD requires removing the loop clamps that hold the fuel manifold to the compressor rear frame damper brackets, inspecting the fuel manifold for wear at each clamp location, and replacing the clamps with new zero-time parts. That AD also requires revising the

Airworthiness Limitations Section to require repetitive fuel manifold inspection and loop clamp replacement. That AD resulted from reports of fuel leaks during engine operation.

We issued these ADs to prevent failure of the fuel manifold, which could lead to uncontrolled engine fire, engine damage, and damage to the airplane. We are superseding these ADs to eliminate potentially confusing and contradictory requirements in these ADs. This proposed AD expands the inspection mandated by AD 2009-05-02 and it expands the list of banned fuel manifolds mandated by AD 90-26-01 and AD 91-20-02.

Actions Since Previous ADs Were Issued

Since we issued AD 90-26-01 (55 FR 49611, November 30, 1990); AD 91-20-02 (56 FR 55231, October 25, 1991); and AD 2009-05-02 (74 FR 8161, February 24, 2009); we received a report of an undercowl fire caused by a fuel manifold high-pressure fuel leak in engine model CF6-80C2, and several additional reports of fuel leaks; four in the CF6-80C2 and one in the CF6-80E1 model engine.

FAA's Determination

We are proposing this AD because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

Proposed AD Requirements

This proposed AD would retain the requirements of AD 90-26-01 (55 FR 49611, November 30, 1990); and AD 91-20-02 (56 FR 55231, October 25, 1991); to remove certain fuel manifold P/Ns, and the requirements of AD 2009-05-02 (74 FR 8161, February 24, 2009); to inspect certain fuel manifold P/Ns and replace certain consumable components. This proposed AD would add a requirement to inspect an additional fuel manifold configuration and replacement of certain loop clamps. This proposed AD would also require repetitive inspection and replacement of tube (block) clamp, and inspection

of the fuel manifold for wear at each tube (block) clamp location. This proposed AD would also require removing certain drainless fuel manifold assembly P/Ns from service.

Costs of Compliance

We estimate that this proposed AD would affect 1,126 engines installed on airplanes of U.S. registry. We also estimate that required parts cost about \$34,894 per engine. We also estimate that it would take about 6 hours to accomplish the actions required by this AD. The average labor rate is \$85 per hour. Based on these figures, we estimate the total cost of the proposed AD to U.S. operators to be \$39,864,904.

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, Section 106, describes the authority of the FAA Administrator. Subtitle VII, Aviation Programs, describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701, "General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This proposed regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

We have determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that the proposed regulation:

(1) Is not a “significant regulatory action” under Executive Order 12866,

(2) Is not a “significant rule” under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),

(3) Will not affect intrastate aviation in Alaska to the extent that it justifies making a regulatory distinction, and

(4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by:

a. Removing airworthiness directive (AD) 90-26-01 (55 FR 49611, November 30, 1990); AD 91-20-02 (56 FR 55231, October 25, 1991); and AD 2009-05-02 (74 FR 8161, February 24, 2009); and

b. Adding the following new AD:

General Electric Company: Docket No. FAA-2007-28413; Directorate Identifier 2007-NE-25-AD.

(a) Comments Due Date

The FAA must receive comments on this AD action by **[INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

(b) Affected ADs

This AD supersedes AD 90-26-01 (55 FR 49611, November 30, 1990); AD 91-20-02 (56 FR 55231, October 25, 1991); and AD 2009-05-02 (74 FR 8161, February 24, 2009).

(c) Applicability

This AD applies to all General Electric Company (GE) CF6-80C2 and CF6-80E1 turbofan engines with fuel manifold, part numbers (P/Ns) 1303M31G04, 1303M32G04, 1303M31G06, 1303M32G06, 1303M31G07, 1303M32G07, 1303M31G08, 1303M32G08, 1308M31G12, 1308M32G12, 2420M70G01, and 2420M71G01, installed.

(d) Unsafe Condition

This AD was prompted by a report of an undercowl fire caused by a fuel manifold high-pressure fuel leak, and several additional reports of fuel leaks. We are issuing this AD to prevent failure of the fuel manifold, which could lead to uncontrolled engine fire, engine damage, and damage to the airplane.

(e) Compliance

Comply with this AD within the compliance times specified, unless already done.

(1) Fuel Manifold Removal.

(i) For CF6-80C2 and CF6-80E1 series engines, before further flight after the effective date of this AD, remove fuel manifold, P/Ns 1303M31G04, 1303M32G04, 1303M31G06, 1303M32G06, 1303M31G07, 1303M32G07, 1303M31G08, and 1303M32G08, from service.

(ii) For CF6-80C2 and CF6-80E1 series engines, at the next engine shop visit after effective date of this AD, remove fuel manifold, P/Ns 1303M31G12, 1303M32G12,

2420M70G01, and 2420M71G01, from service.

(2) Fuel Manifold, Loop Clamp, and Tube (Block) Clamp Inspection and Replacement – Drainless Assembly.

(i) For CF6-80C2 series engines, with fuel manifold, P/N 1303M31G12 or 1303M32G12, installed, refer to Table 1 to paragraph (e) of this AD, accomplish the initial inspections of the fuel manifold and replacement of the loop clamps in accordance with paragraphs 3.A and 3.D of GE Service Bulletin (SB) CF6-80C2 S/B 73-0326, Revision 4, dated December 23, 2009.

(ii) For CF6-80C2 series engines, with fuel manifold, P/Ns 2420M70G01 or 2420M71G01, installed, refer to Table 1 to paragraph (e) of this AD, accomplish the initial inspection of the fuel manifold and replacement of the loop clamps in accordance with paragraphs 3.C and 3.D of GE SB CF6-80C2 S/B 73-0326, Revision 4, dated December 23, 2009.

(iii) For CF6-80E1 series engines, with fuel manifold, P/Ns 1303M31G12 or 1303M32G12, installed, refer to Table 1 to paragraph (e) of this AD, accomplish the initial inspection of the fuel manifold and replacement of the loop clamps in accordance with paragraphs 3.A and 3.C of GE SB CF6-80E1 S/B 73-0061, Revision 4, dated December 23, 2009.

(iv) For CF6-80E1 series engines, with fuel manifold P/Ns 2420M70G01 or 2420M71G01 installed, refer to Table 1 to paragraph (e) of this AD, accomplish the initial inspection of the fuel manifold and replacement of the loop clamps in accordance with paragraphs 3.B and 3.C of GE SB CF6-80E1 S/B 73-0061, Revision 4, dated December 23, 2009.

(v) Thereafter, inspect fuel manifolds P/Ns 1303M31G12, 1303M32G12, 2420M70G01, and 2420M71G01 installed, within every 7,500 flight hours (FH) since the last inspection, in accordance with paragraphs (e)(2)(i) through (e)(2)(iv) of this AD.

Table 1 to Paragraph (e) – Fuel Manifold Inspection and Loop Clamp Replacement and Inspection Criteria

If:	Then:
1 – If the engine was previously inspected using any of the following: <ul style="list-style-type: none"> • GE SB CF6–80C2 SB 73–0326 R04, Revision 4, dated December 23, 2009; • GE SB CF6-80C2 SB 73-0326, Revision 3, dated April 24, 2009; • GE SB CF6–80E1 SB 73–0061 R04, Revision 4, dated December 23, 2009 or; • GE SB CF6-80E1 SB 73-0061, Revision 3, dated April, 24, 2009 	Then inspect fuel manifold and replace clamps within 7,500 flight hours (FH) time-since-last-inspection (TSLI) or within 6 months after the effective date of this AD, whichever occurs first
2 – If the loop clamps installed at last shop visit were previously used or of unknown heritage or the engine was previously inspected using either of the following: <ul style="list-style-type: none"> • GE CF6-80C2 SB 73-0326, Revision 2, dated August 30, 2007 or earlier; • GE CF6-80E1 SB 73-0061, Revision 2, dated August 30, 2007 or earlier 	Then inspect fuel manifold and replace clamps within 1,750 FH time-since-last-shop-visit or within 4 months after the effective date of this AD, whichever occurs first
3 - If the engine is a first-run engine, an engine with zero-time, or has new loop clamps previously installed on-wing or at shop visit	Then inspect fuel manifold and replace clamps within 7,500 FH time-since-new or since zero-time that new loop clamps were installed
4 - If the engine has already exceeded the 1,750 FH initial inspection threshold on the effective date of this AD but has fewer than 4,500 flight hours TSLI	Then inspect fuel manifold and replace clamps within 4,500 FH TSLI or 4 months after the effective date of this AD, whichever occurs first
5 - If the engine has already exceeded the 4,500 FH initial inspection threshold on the effective date of this AD	Then inspect fuel manifold and replace clamps within 4 months after the effective date of this AD

(3) For CF6-80C2 series engines, with fuel manifold, P/Ns 1303M31G12, 1303M32G12, 2420M70G01, or 2420M71G01, with tube (block) clamp, P/N 1153M26G15, refer to Table 2 to paragraph (e) of this AD, accomplish the initial inspection of the fuel manifold and tube (block) clamp, and replacement of the fuel manifold and tube (block) clamp, if required based on inspection results, in accordance with paragraph 3.A of GE SB CF6-80C2 S/B 73-0414, dated July 2, 2013.

(4) For CF6-80E1 series engines, with fuel manifold, P/Ns 1303M31G12,

1303M32G12, 2420M70G01, or 2420M71G01, with tube (block) clamp, P/N 1153M26G15, refer to Table 2 to paragraph (e) of this AD, accomplish the initial inspections of the fuel manifold and tube (block) clamp, and replacement of the fuel manifold and tube (block) clamp, if required based on inspection results, in accordance with paragraph 3.A of GE SB CF6-80E1 S/B 73-0121, dated July 2, 2013.

(5) Thereafter, inspect fuel manifold, P/Ns 1303M31G12, 1303M32G12, 2420M70G01, and 2420M71G01, within every 7,500 flight hours (FH) since the last inspection, in accordance with paragraphs (e)(3) and (e)(4) of this AD.

Table 2 to Paragraph (e) – Fuel Manifold and Tube (Block) Clamp Inspection and Replacement Criteria

If:	Then:
1 - If the engine is a first run engine or the engine was previously inspected using either of the following: <ul style="list-style-type: none"> • GE SB CF6–80C2 S/B 73–0414, dated July 2, 2013; • GE SB CF6–80E1 S/B 73–0121 dated July 02, 2013 	Then inspect clamps and replace within 7,500 FH TSLI
2 - If the engine has already exceeded the 7500 FH initial inspection threshold on the effective date of this AD	Then inspect clamps and replace within 3 months after the effective date of this AD

(f) Prohibition Statement

After the effective date of this AD, do not install fuel manifold, P/Ns 1308M31G04, 1303M32G04, 1303M31G06, 1303M32G06, 1303M31G07, 1303M32G07, 1303M31G08, 1303M32G08, 1308M31G12, 1308M32G12, 2420M70G01, or 2420M71G01, on any engine.

(g) Definition

For the purpose of this AD, an engine shop visit is the induction of an engine into the shop for maintenance involving separation of pairs of major mating engine flanges (lettered flanges), except that the separation of engine flanges solely for the purposes of transporting the engine without subsequent engine maintenance does not constitute an

engine shop visit.

(h) Alternative Methods of Compliance (AMOCs)

The Manager, Engine Certification Office, FAA, may approve AMOCs for this AD. Use the procedures found in 14 CFR 39.19 to make your request. Previously approved AMOCs for AD 2009-05-02 (74 FR 8161, February 24, 2009) remain approved for the corresponding requirements of paragraphs (e)(1) through (e)(5) of this AD.

(i) Related Information

(1) For more information about this AD, contact Kasra Sharifi, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA. 01830; phone 781-238-7773; fax: 781-238-7199; email: kasra.sharifi@faa.gov.

(2) General Electric Service Bulletin (SB) CF6-80C2 S/B 73-0326, Revision 4, dated December 23, 2009, SB CF6-80E1 S/B 73-0061, Revision 4, dated December 23, 2009, SB CF6-80C2 S/B 73-0414, dated July 2, 2013, and SB CF6-80E1 S/B 73-0121, dated July 2, 2013, pertain to the subject of this AD and can be obtained from GE using the contact information in paragraph (i)(3) of this AD.

(3) For service information identified in this AD, contact General Electric Company, GE Aviation, Room 285, 1 Neumann Way, Cincinnati, OH 45215; phone: 513-552-3272; email: geae.aoc@ge.com.

(4) You may view this service information at the FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7125.

Issued in Burlington, Massachusetts, on December, 24, 2013.

Frank P. Paskiewicz,
Acting Director, Aircraft Certification Service.

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